

The Evolution of the Victorian Art School

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Abstract

This article seeks to document the architectural history of the Victorian art school type, beginning with the search for a home for the Government School of Design following its expulsion from Somerset House, to the construction of purpose-built studios behind the new museum complex of 'Albertopolis' at South Kensington, and finally to its proliferation through the major industrial cities of Britain where the most significant examples of the type would be realised.

Manchester, Birmingham and Glasgow Schools of Art reveal an unprecedented concern for the design of an ideal internal environment in the context of the polluted industrial Victorian city. These buildings were symbols of the possibility for the diffusion of art culture in a rapidly transforming society. The art school embraced the architectural potential to be found in the synthesis of the functional requirement for the provision of plentiful light and air, with the desire for an appropriate formal expression for a new kind of public building (supported by local rates), properly fit for its place in the civic heart of the city.

Introduction

With their paint-splattered studios and buzzing atmospheres that never fail to inspire the ambitions of would-be artists, Victorian art school buildings have today become so accepted a part of the cultural and artistic life of the post-industrial city that their presence is often taken for granted. But the distinctive presence of these buildings was far from a fait-accomplish – they stand testament to the radical ideas of figures as diverse as Henry Cole, John Ruskin and William Morris, and they represent built evidence of the late-nineteenth century struggle of the provincial city for cultural independence from the capital. They were one of the first of a new range of municipal buildings to be supported by local government, and have played a critical part in the shaping of the careers of artists as varied as Valette and L.S. Lowry in Manchester, Mackintosh and the Macdonald sisters in Glasgow, and Henry Moore and Barbara Hepworth in Leeds. But above all their lofty volumes spoke to an emerging future, ventilated by fresh air circulated in abundant volumes and illuminated by copious amounts of ‘clean’, bright daylight.

Text

The origins of the new public Schools of Practical Art (as opposed to ‘Academies’, or Schools of Fine Art) are to be found in the Government Schools of Design established in 1837, and their rapid expansion under the Department of Science and Art, headed up by Henry Cole after the Great Exhibition of 1851. By the mid-nineteenth century the concept of a practical art school was already long established on the continent, particularly through the École des Beaux Arts in Paris. However, in Britain, the 1836 Select Committee Report into Art and Industry concluded that:

From the highest branches of practical design down to the lowest connexion between design and manufactures, the Arts have received little encouragement in this country... In many despotic countries far more development has been given to genius, and greater encouragement to industry, by a more liberal diffusion of the enlightening influence of the Arts. Yet, to us, a peculiarly manufacturing nation, the connexion between art and manufactures is most important; – and for this merely economical reason (were there no higher motive), it equally imports us to encourage art.ⁱ

The committee made two chief recommendations: that schools of design should be established to provide suitable instruction in the application of art to industry, and that encouragement should be given to the ‘formation of open public galleries, or museums of art, in the various towns willing to undertake a certain share in the foundation, and to continue the maintenance of such establishments.’ⁱⁱ

However, by 1849 another Select Committee, while expressing some satisfaction with the establishment of the schools, considered progress to be too slow. A survey of industrial firms found that only 20% of designers had been trained at a School of Design. There was concern that the schools were attracting the wrong kind of students, interested only in ‘fine art’ or art as a pastime.ⁱⁱⁱ William Dyce, Director at Somerset House and himself a scientist by training, was of the opinion that students should be taught more about the manufacturing processes and skills that they would need to understand in order for their work to be of practical use:

Some thought that by excluding the study of the human figure and by keeping the pupils to the study of ornament, chiefly architectural, the character of the school might be maintained... My view was that the students should be taught to make working models and patterns, and in order to do that it was necessary they should understand the various processes of those manufactures to which designs were to be applied.^{iv}

However Henry Cole recommended a more centralised management structure to enforce the ‘right’ kind of teaching:

If the management in the beginning had been of the right description, it would very soon have been seen whether the school was going right or going wrong, and they would, if it had gone wrong, have put it to rights; but my impression is, that the management being very large and numerous, actually prevented Mr. Dyce from going right.^v

In developing the infamous twenty-three stage National Course of Instruction, initiated in 1853, Cole set out to make the case for art and design’s central role in the industrial and economic – and therefore material, rather than cultural – well-being of the nation. He found support from Francis Fuller (Chairman of the Council of the Society of Arts), who wrote a pamphlet which argued that instead of preserving the Crystal Palace, the profits of the Great Exhibition should be invested in endowing Schools of Design in industrial cities such as Birmingham, Manchester, Sheffield, Belfast, Glasgow and Leeds (since ‘the appeal [for the Great Exhibition] which found most favour was that which promised some permanent advantage for our trade and manufactures’^{vi}):

The Schools of Design... miserably mismanaged, and grudgingly and stingily supported, have already produced a number of artists of no mean merit, as several departments of the Exhibition prove. But not only are these schools much too few in number, but so ill supported, that in almost every one the study of the true principles of design, applied to manufactures, is literally a pursuit of knowledge under difficulties.^{vii}

The need for a vast improvement in the state of art education facilities was clear. The construction of the National Gallery (which would also house the Royal Academy), had freed up the Exhibition Room and adjoining premises in Somerset House for the first Government School of Design in 1837. By 1849, however, the school had outgrown its accommodation. In 1853 the Government requisitioned the rooms for the use of the Treasury, and the male school moved to the grounds of Marlborough House, where two wooden huts were constructed as classrooms. The female school, meanwhile, was housed in a rented house on the Strand. After visiting these premises, an anonymous manufacturer, writing in Dickens' 'Household Words', was shocked both by the condition – and invisibility – of the School:

On the left hand side of a door-way leading up a very narrow passage, I saw written up "Female Classes of the Government School of Design," rather small, on a convex board, and half slipping round a corner as if ashamed of itself...

Though it was only two o'clock, the light was so bad, owing to the fog, and the dusty, uncleaned windows, that to distinguish anything accurately was out of the question. I asked a student why they did not have drawing-lamps, but was informed that none were allowed... Though the fire was small, the room was very hot and close, and there was no sort of provision for ventilation.^{viii}

The anonymous visitor to the Female Schools concluded his report with the plea:

Can nobody suggest to the Board of Trade, some place with a proper light? The importance of a large room, besides the advantage of light and air, is very great. A number of students can stand round and see the instructor paint, or give a special lesson to a pupil, from which others may equally benefit. Besides this, there is a great advantage in students seeing each other work; they learn from each other, and it also excites emulation. Can no such room be found in all this vast metropolis, where so many splendid public and private edifices and buildings exist?^{ix}

His appeal was eventually acceded to by Cole, who, as the Museum of Manufactures grew, aspired to incorporate a permanent and more fitting home for the schools. In 1856, a large part of the surplus from the Great Exhibition – some £213,305 – was spent on purchasing land on the western outskirts of London, with the intention of founding an institution that would 'serve to increase the means of Industrial Education, and extend the influence of Science and Art upon Productive Industry' (what is known today as the Victoria and Albert Museum).^x The combined museum and schools would also form the headquarters of a new Government Department, the Department of Practical Art, controlled by the Board of Trade and supporting a newly revitalised national network of schools of art.^{xi}

A Proper Light

The studios were constructed on the second and third storeys of a new wing of the museum, behind the North and South Courts.^{xii} Francis Fowke completed the work in 1863, but the piecemeal construction effort that characterised developments at South Kensington meant that the lecture hall and West Staircase connecting to the studios were not completed until 1869. The staircase celebrated the new Department in extravagant fashion, decorated with ostentatious mosaics and stained glass windows. In a review of 'Metropolitan Improvements', one reporter dryly remarked that 'should a post-mortem examination be ever held of the remains of any official of South Kensington, the operator might well expect to

find the right and left ventricles stamped respectively in highly-illuminated and gorgeously-inexplicable letters with the never-failing local legend of ‘Science and Art’.^{xiii}

[Fig. 1]

The studios themselves, however, were much plainer. One wing extended northwards by about 30 metres, where it met a second wing that extended eastwards by 60 metres, composed of a single volume on the second floor resting on iron girders that also ventilated the building. The roof was supported on iron trusses that spanned a clear 12 metres between the walls.

[Fig. 2]

In the third chapter of the ‘Directory, with Regulations for Establishing and Conducting Schools of Art’, published annually between 1856 and 1902, a general outline was indicated for the accommodation of a school of 50 students, to be scaled upwards as appropriate. The 1888 edition called for:

- (a) One Elementary room 20 x 30 feet. This room should not be less than 16 feet high, and may be lighted by skylights as well as by side windows.
- (b) One room for study from Life or Life-size casts, not less than 20 x 24 feet. This room should be lighted from the north side by a single large window, the top of which (carried up in a dormer if necessary) should be at a height above the floor equal to $\frac{3}{4}$ the depth of the room, or if the pitch of the roof be steeper than 60°, a skylight should be made in conjunction of the window, so as to gain the same effect in lighting.
- (c) One modelling room 20 x 15 feet.
- (d) One master’s room 12 x 15 feet. This room should be lighted by a side light from the north, if possible.
- (e) One cloak-room for females 12 x 8 feet 6 inches.
- (f) A kitchen and bedroom for the attendant, each 12 x 10 feet.^{xiv}

While this guidance offered direction as to the quantity and penetration of light required (in terms of window size and ratio to room depth), it did not offer much guidance in relation to orientation, besides stipulating that the Life room and the Master’s room should be lit from the north.

In the following two decades one hundred and twenty schools of art were established by the Department of Practical Art (subsequently the Department of Science and Art). However, despite the fact that The Public Libraries Act of 1855 sanctioned the provision of buildings ‘suitable for public libraries, or museums, or both, or for schools for science and art’, most were housed in temporary accommodation inside spare rooms of Council offices or Town Halls.^{xv}

The first purpose-built schools were constructed in historic market towns and cathedral cities. Foundations for new schools were laid in Wolverhampton in 1854, Norwich in 1857, Bristol in 1858, Coventry, Lambeth, and Nottingham in 1863, and Lincoln and Exeter in 1865.^{xvi} But it was in the major industrial cities of the north that the environmental parameters of the art school would be properly tested. Here light was in short supply. Quantifiably, the average loss of light at any given time due to smoke pollution in the worst affected regions of Britain was up to 45% (this would have been exacerbated in cold and humid weather conditions, or winter temperature inversions).^{xvii} By the beginning of the twentieth century, at least, it was clear that the problem was much worse in the industrial cities of the north, with one study identifying the annual soot fall in the centre of Glasgow as 820 tons per square mile, in comparison with 426 tons in London.^{xviii} The necessity of dealing with this problem served to

illuminate wider questions about the state of the city. The woefully inadequate nature of the accommodation of the school in Manchester gave rise to a prolonged and quite explicit debate about the effects of industry on the city's climate, and the problems of individual rooms were (sometimes quite incredibly) extrapolated to justify the position that the industrial city would never be capable of producing art to rival the great centres of European culture. For others, if the environmental problem could be resolved, they saw no reason why such an enviable cultural position should not be entirely inevitable.

Manchester

The School of Art in Manchester was the first of the large new art schools to be built. The original School of Design had opened in 1838, the first outside of London, and was housed in Charles Barry's Royal Manchester Institution of 1835. The school was a success, but did not grow to have the influence that many expected. As the century drew on, there was much debate at the annual meetings of the school as to what it would take for Manchester to match the reputation of Paris, Dresden, Florence, and other great European cities of art culture. In 1874, Hugh Birley, the local M.P., went so far as to suggest the local environment might be at fault:

Now one argument against us and against our power of doing like they have done is this, that our climate is against us, that it is a cold, foggy, and dark climate, and that its disagreeable qualities are much heightened by excessive smoke.^{xix}

The Royal Academician George Dunlop Leslie also commented that art in a place like Manchester 'must necessarily be rather an exotic plant. The stern and grim character of your buildings and occupations prevent it springing up as it does in Italy or other brighter and sunnier climes.'^{xx} And the Bishop of Salford (the future Archbishop of Westminster), Dr. Herbert Vaughan, who as well as being a regular figure at the Chamber of Commerce did much to promote commercial and technical education in Manchester^{xxi}, claimed that:

The necessity for larger and more suitable premises was evident, and the premises should be built for the purpose, because, in such a climate as Manchester, students could not be expected to draw well by every light. The necessity for adequate provision for the School of Art was more evident in Manchester than in most other towns, because we are not blessed with an atmosphere and a sky which promote Art.^{xxii}

The nature of the school's accommodation only served to exacerbate the environmental problems.^{xxiii} In 1876 the headmaster of the school, William Muckley, noted that although large numbers of students were joining every quarter, the annual total only revealed a slight increase. He explained that 'while many may leave the School from causes which are anticipated on joining, and which we cannot control, a considerable number leave in consequence of being unable to contend against the difficulties incident to our defective premises.'^{xxiv}

The rooms the school occupied in the Institution were top-lit only, and the nature of the volumes of the spaces meant that that the dim light could only be thrown downward, illuminating horizontal surfaces but not the easels or the walls where casts and examples would be displayed. Frederick William Grafton, Chairman of the School Committee, implored potential benefactors to go and see the school for themselves:

If any argument were needed to convince you gentlemen of the necessity which exists for a change, you could not do better than visit the Institution yourselves, for I venture to affirm nothing more depressing to art students can be found than the very dark and dingy character of our present abode.^{xxv}

Despite these circumstances the school topped the national table of medals awarded to students in the early 1870s. However, in May 1875 the school was given notice to leave the Institution, which now wanted the space to put on its own exhibitions.^{xxvi} Initially enquiries were made for other suitable rooms to lease, but none being forthcoming it was decided instead to build afresh. A north-facing site on Cavendish Street in Chorlton-upon-Medlock was secured, ‘admirably adapted as to lighting, and moderate enough with regard to the price.’^{xxvii}

George Tunstall Redmayne (brother-in-law and former pupil of the architect Alfred Waterhouse) was appointed as the architect. Along with the headmaster he visited several regional art schools ‘reputed as most efficient for their purpose’, and promised not only to ‘fulfill the requirements of the brief’ but also to design a building that ‘will also possess architectural features worthy of the object and of the period in which the building is erected.’^{xxviii}

[Fig. 3]

In 1877 Cole visited Manchester and lectured on the subject of ‘The Meaning of Art Culture’, emphasising the practical aspects of what a new art school should constitute:

I hope you will allow the stern necessities of a School, and common sense, to have the first consideration in its construction. There is always such a tendency to prefer the outside of a building to the inside, that light, air, space, ventilation, heating, convenient ingress and egress, and all sanitary arrangements come off second best or are forgotten. I hope your Committee will have the courage to leave out all questions of style and decoration till these are effectually secured. Leave the façade in rough brickwork, like the Duomo of Florence, till the proper completion can be paid for.^{xxix}

The new building opened in April 1881. Financial constraint had necessitated that Redmayne temper the extravagance of his published design, though the prospect of a brick-fronted school was so abhorrent that the money was eventually stumped up to present the front façade in stone. The façade is symmetrical, with a classical rhythm, but expressed in a layered Gothic vernacular. The central bay is intricately decorated, with a deeply moulded arch above a protruding flight of steps to the front door. The main floor is raised up half a level from the street, forming a suitably grand entrance of a scale that indicates the public and philanthropic nature of the institution, as well as providing for the sheltered stairs that form the transition between the world of the street outside and the higher ideals of art embodied within. Three bays either side of the entrance are surmounted by barely pointed arches in the style of an arcade, but are filled in with solid stonework and large, but quite utilitarian, square windows. The pillars supporting the arches are buttressed to support an upstanding parapet, disguising the otherwise dramatic scale of the strip rooflight in the north pitch of the roof, which floods the space below with even, bright north light.

The gables at either end of the building protrude slightly in plan, forming giant arches filled with a classical minor-major-minor rhythm of windows with pointed heads. These arches are flanked with pinnacles at roof level. In spite of (or perhaps because of) Cole’s sermonising the different elements and layers of the façade appear ponderously exaggerated. ‘Functional’ or ‘plain’ studios had to be supplied with plenty of the right kind of light, but art schools also had to stand right alongside the new museums and libraries that were springing up in civic centres right across the country in the quite literal display of culture as a civic project.^{xxx}

The form of the building is best understood in section. Entering from the north side the

visitor passes through the spine wall to the corridor to the south. Staircases at either end of the main corridor connect the different floors. The basement housed the modelling and casting workshops; the male elementary studios, architectural and mechanical drawing room and painting studios were housed on the ground floor; and the main toplit space, some 90 by 25 feet, was initially devoted to a Gallery of Casts, although sections could be partitioned off for life drawing.^{xxxI} The top light from the north has the effect of rendering strong contrast between light and dark on the vertical surfaces of objects displayed underneath, and a bright even, shadowless light on the horizontal plane – a vast improvement on the rooms inside the Royal Manchester Institution, and more than adequate for illumination (even taking the smoke-filled sky into consideration), as quantitatively, diffuse light is three times brighter from the apex of the sky as from the horizon.

[Figs. 4, 5]

Birmingham

The art school in Birmingham would form a key element of the architectural development and expression of the new civic core. Birmingham School of Design opened in 1843, but, like Manchester, rapidly outgrew its premises, affecting its ability to offer any training that extended much beyond elementary drawing.^{xxxii} Evidence of the unsatisfactory nature of the school's accommodation can be seen in a letter from a student, seemingly a spokesperson for the advanced female students of the school, to the Committee of the School of Art, dated 17th November 1880. She wrote,

Since my last appeal to you on behalf of the advanced students of the school of art, I have enquired at some of the principal schools as to their class hours and privileges... All the real hard workers of the school feel quite as deeply as I do myself on the subject. The standard at South Kensington is raised every year... [and] all other schools are giving more and more time and facility for study.

Will you... give back to the advanced students the privilege of working in the School all day on Tuesdays and Thursdays? We should not interfere with the Elementary Students, as we never work in their rooms. The male students are so few we could not be in their way and as we should leave the building at the same time, the presence of a few ladies could not make the atmosphere any worse at night, than it is always and even if we stayed till 5 o'clock it would leave from 5 till 7.15 for ventilation. We do not ask you for "Studios" but only to be put on an equality with other art schools...^{xxxiii}

While the author of this letter claims that the arrangement she suggests could not 'make the atmosphere any worse' at night, it is of course significant that this is mentioned at all – the quality of air was a major concern in these overcrowded, gas-lit classrooms, especially in an age when tuberculosis was still very common.^{xxxiv}

The mayor of Birmingham, Joseph Chamberlain, took the lead in an appeal for a site and funds for the construction of the new school. Amongst others, the Tangye brothers, co-owners of a large engineering firm (who had also donated money for the Corporation Art Gallery) donated £10,000. Richard Tangye wrote in explanation:

It is all very well for critics to exclaim against Birmingham manufacturers and artisans because of their inferiority to their foreign competitors in the matter of design, and manufacture, but what chance have they of improving in these respects? South Kensington is practically as far away as Paris or Munich, while our competitors on the Continent, in almost every manufacturing town, have access to collections containing the finest examples of art, furnishing an endless variety of style and design.^{xxxv}

In 1881, Cregoe Colmore, a local businessman, was persuaded to donate a site perpendicular to the Edmund Street façade of the Art Gallery. A new street fronting the proposed school was named Margaret Street, and John Henry Chamberlain (of no relation to the mayor) was selected to design the building.^{xxxvi} He died in October 1883, but his partner William Martin oversaw construction of the new school executed to his design, which was completed in September 1885.

[Fig. 6]

The development of Chamberlain and Martin's design is most evident in the evolution of the long section between 13th February and 14th March 1884. The section of 13th February shows the glass roof lanterns that still exist today at the top of the two main stairs. The stairs are lit by tall pointed windows and are connected to the corridor that runs along the back of the Painting studio, with an arched balconet looking into the museum below. The northern gable, however, is annotated as being seven feet too high. This was resolved in the drawing dated 14th March so that the roof of the gable met the roof of the main front of the building. However, the stair towers are shown to be much plainer with square sash windows, and tiled pitched roofs with skylights to the north, rather than all glass lanterns.

[Figs. 7, 8, 9]

The effect of reducing the height of the northern most gable was to remove the top studio level indicated in the drawing of 13th February, with its glazed end to the street, which was replaced by the characteristic circular form on the Margaret Street façade (that would eventually evolve from a simple window to the sculpted panel that is seen today). As a result, the top level room (which was to become the Antique studio) became taller, incorporating the decorative wrought iron arches supporting the exposed purlins of the roof on one side, and the distinctive north-west facing strip windows on the other, which continue past the line of the eaves into the roof.

[Fig. 10]

These changes to the Antique studio were ultimately combined with the earlier, more elaborate proposals for the stair towers with all glass lanterns at the top, which give the building its unique atmospheric quality as light filters down the staircases all the way to the basement. The 'areas for light' are faced with glazed white tiles to ensure that sufficient daylight is maintained to penetrate the adjoining spaces.

[Fig. 11]

A report dated the 3rd March 1884 reveals Martin's involvement in modifications made to the design in consideration of the lighting and ventilation arrangements for the school:

Our object in suggesting the alterations in the drawings was to obtain increased light and ventilation to the various rooms. The heights have been increased as follows, namely –

Basement Floor	From 11'10" to 16'0"
Ground Floor	From 13'9" to 16'6"
First Floor	From 13'9" to 16'6"

The widths of the areas have been increased from 2 feet to 4 feet and some additional areas to the length of 54 feet have been provided for the purpose of improving the light in the Basement... The deepening of the Basement Floor necessitates an alteration in the position of the Warming apparatus which we have placed in

a rather more central position than it was in before and we have added two vaults under the footpath, one to be used for coals for the apparatus and the other as a Meter House...

The increased light which we have been able to obtain and the improved alterations in the plans, have induced the Head Master to reconsider the use of the rooms in the Basement, and he has now decided to use the room next to Edmund Street as the "Modelling Room" and the room next to Cornwall Street at the other end of the building for the "Designing Room"... In order to obtain more light into the Antique Room, which Mr. Taylor considered to be inefficiently lighted upon the original drawings, we have placed a stage or gallery along one side of the Conservatory and of the room on either side of the Conservatory, by which means we are able to get a light direct from the sky along the whole length of the Antique Room.^{xxxvii}

The significance Martin attributed to the question of the adequate provision of light and air is revealed by the costly increase in volume on each floor, the alterations proposed to increase the light to the Antique room, the provision of extra 'areas for light' to the front façade and rear of the building, and finally in the addition of extra glazing, despite additional claims made by the contractor due to increasing costs.

This can be seen in the 1893 extension, where the junction between wall and roof is disintegrated as the wall-to-wall north-west skylight is angled at a chamfer, and the wall separating the room from the corridor is punctured by pointed gothic windows and arched double doors suggestive of the external façade. The interior of the art laboratory is an in-between space, part enclosed, part open to the sky, and separate from the interior of the rest of the building. Similar spaces are also to be found in the Glasgow School of Art, where the Composition Room above the Library has large plate glass skylights juxtaposed against the small rectangular rolled glass panes so typical of Mackintosh in the bay window beneath.

[Figs. 12, 13]

Glasgow

The similarities between Birmingham, Manchester and Glasgow Schools of Art are more than coincidence. In 1893, a deputation from the Glasgow School of Art visited the schools at Manchester, Birmingham and London in preparation for drawing up their own brief for a new building^{xxxviii}, and Mackintosh's design was selected at competition because it deviated the least from a sketch plan prepared by Francis Newbery, headmaster at the time, in consultation with the authorities at South Kensington.^{xxxix}

The school was constructed in two phases, the eastern portion between 1897 and 1899, and the western portion between 1907 and 1910. Broadly in section the building has three main levels of studios facing northwards onto Renfrew Street: the basement is lit from skylights (filling the lightwells between the building and the street); the ground floor level is lit by large windows to the street; and the first floor (comprising the largest studios) is lit both by taller windows and an area of glass turning to the sky above the windows. The entrance is located centrally beneath the director's room and studio. Spacious corridors doubling as galleries at each level give access to the various studios through the massive east-west spine wall, and at basement level additional studios with pitched roofs are lit from south-facing skylights. Off this section are hung three wings of additional special accommodation to the south: containing respectively, to the east, the caretaker's flat, staff rooms and an additional studio at roof level; centrally, cloak and student lunch rooms beneath a large toplit museum; and to the west a lecture hall, architecture studio and famously the double height library beneath a further studio in the roof. The straightforward simplicity of the 'E'-shaped massing (once the second phase had been completed in 1909) made maximum coverage of the

difficult site possible while admitting east and west light into the wings of the 'E' (as it was stipulated in the competition that there should be no windows to the neighbouring properties to the south).

[Figs. 14, 15]

As at Manchester and Birmingham, the Glasgow School of Art is entered centrally in plan and in section. The visitor is drawn up the main stairs by light filtering down from above, into the museum, broadly lit by glazed strip lights in the pitched roof as at Birmingham: it is as if the visitor has been transported outside again, only into an idealised environment for viewing art.^{xi}

[Figs. 16, 17]

Andrew MacMillan has argued that none of Mackintosh's buildings are more innovative, heralding 'a new age of architectural honesty'^{xli}, than the Glasgow School of Art, and yet according to Girouard it is a paradox, 'a stone building in a stone city, having risen, originally, out of the stone tenements of Renfrew Street and fitting naturally among them.'^{xlii} For Dean Hawkes, the complexity of the building is found in the multiple ways the cross-sections of the building admit different qualities of light to the interior:

To left and right at the entrance level there are corridors lit by south-facing windows and above these there are corresponding corridors, that to the east lit by wonderfully shaped rooflights, the other by south-facing windows that here are framed by window seats.^{xliii}

The ever-changing quality of the building – a result of its protracted development and Mackintosh's habit of repeatedly making alterations – gives it an almost organic quality. A comparison of the 'relatively direct derivations of Scottish picturesque forms at the south-east end, to the mature, sophisticated intellectual and artistic invention of the south and west gables of the later Library wing' demonstrates Mackintosh's developing maturity, what Andrew MacMillan describes as Mackintosh's 'ten formative years of building', and the fulfillment of his experimental mantra that 'There is hope in Honest Error, none in the Icy Perfection of the mere stylist.'^{xliv}

The Art School in Context

Of course the art school was not the only building type that can reveal the anxieties with which different elements of Victorian society viewed the rapidly transforming city. The architecture of a municipal council building or town hall would often make a statement about civic pride, tradition and longevity^{xlv} – appropriating architectural motifs associated with ancient Greece, Rome or the city states of the middle ages. The problem of providing a better interior environment with more light and cleaner air in the context of the atmospheric poverty of the modern industrial city, however, remained for the most part unsolved. The architecture of the Crystal Palace only offered the possibility of lightweight, glass structures unsuitable for maintaining the environment of a regular, cellular building as it exaggerated rather than tempered climatic extremes. The expansive application of lightweight steel and glass structures to buildings other than greenhouses or train stations would have to wait until the twentieth century, as mechanical servicing technologies were not yet powerful enough to apply enough heat or cooling to compensate for the impractical and transient thermal properties of these new materials.^{xlvi} These problems were brought to the fore in the art

school, where the need for civic propriety was matched by the functional necessity of plentiful light from specific directions.

The provision of light in a polluted context was not one that affected the art school alone. Board schools, constructed after the 1870 Education Act, also had to contend with the same problem. However, these buildings tended to be designed on a tight budget, and so the area of glass – while considered essential – was calculated to provide the right *quantifiable* amount of light, and no more. Compact sites were often secured without due consideration to orientation. The resulting ‘robust and imposing’^{xlvi} buildings tended to cover the whole site and grow upwards, with classrooms facing in opposite directions, so that the internal spaces of the schools suffered from all the ensuing environmental problems that could arise.^{xlvi}

Chamberlain and Martin were the architects of choice for the design of Board schools in Birmingham, and a comparison with the art school serves to highlight the further attention devoted to lighting in the latter. The majority of classrooms in the centrally located three-storey Oozells Street School of 1877 are lit from the south-west or north-east, both facades with glazing ratios of around 20%.^{xlvi} The largest part of the glass area in the art school, on the other hand, faces north-west, with a glazing ratio of over 40%. What is more, the studio windows are often turned up towards the apex of the sky, admitting a brighter light.

The abolition of fees in 1891, and the establishment of the Board of Education in 1899 led to improvements in the planning of the board schools. Increasingly, the central hall plan became accepted as the standard form for new buildings. Mackintosh’s Scotland Street School of 1906 is an example of this type. The construction of the school was mired in controversy as Mackintosh repeatedly over-elaborated or exceeded the requirements of the Corporation of Glasgow brief; however – despite this – the north and south elevations only have a glazing ratio of approximately 25%, still significantly less than the at the time half completed art school’s north façade, where the ratio is 40% (and where again light is borrowed from the roof). The greater emphasis placed on orientation in the art school is clear when it is considered that the south façade has a glazing ratio of only 10%.

[Fig. 18]

What further distinguishes the art school from the train shed, the Great Exhibition buildings, or other characteristically Victorian building types (such as schools and hospitals), is the nature of the architectural rather than engineering programme: these are buildings concerned with the environment in a fundamentally fuller sense of the meaning. The symbolic significance inherent in the architect’s use of light can be more readily perceived in a productive building, rather than galleries or museums (where top light is all that is required). Similarly, the creation of the right conditions for the artist’s impression of light affords the possibility of a more complete architectural composition, and allows for a more complete understanding of ambiance and atmosphere than is possible from the mere calculation of lux falling on a blackboard or worktop. In the art school this new ideal of composition was reconciled with the unusually specific functional requirements that governed the design of studios that had to admit the right *quantity* and *quality* of light to justify the explicitly environmental arguments made for their construction.

Local Centres of Civilisation

It is curious to note how most of the great triumphs of art have been won in cities, and in cities, too, whose life was oftentimes of the busiest and most complex description... A civic life would seem to knock fire out of men, like the sparks evolved from the contact of flint and steel.

Francis Newbery, 1897ⁱ

It could be claimed that the story of the art school is the story of a building type representing the nationalisation of local art cultures and of practical education; one of the first serious attempts at state intervention in training for industry. The association of the schools with the Department of Science and Art, celebrated on the West Staircase at South Kensington, symbolically represented the London-centric view of the schools as a unified national institution, and the publication of instructions for the building of other schools detailing what the Department regarded as the correct brief for a set of rooms, to be scaled upwards as appropriate, further demonstrates the homogenising and centralising tendencies of the authorities in London.^{li} The dry practicality of the Directory brief, and the schedules of suggested furnishings and fittings, left no room on paper for schools outside of London to justify any expenditure in terms that asserted the individual identity of a particular city: a point that Cole himself reinforced in Manchester when he made his plea for ‘common sense’ and ‘stern necessity’ to govern the design of the new building.

However, the quite pragmatic question of the provision of the right amount of light and air became embroiled in a wider scientific and cultural debate about how to improve the condition of the industrial city. In 1888, Thomas Greenwood, in response to the question, ‘Why Should Every Town Have a Museum and Library?’ argued that:

A Museum and Free Library are as necessary for the mental and moral health of the citizens as good sanitary arrangements because the existence or absence of a Museum and Free Library in a town is a standard of the intelligence and public spirit manifested in that town.^{lii}

Similarly, we can also view the provision of art schools as part and parcel of the expansion of new civic buildings to serve a wider public. The new civic institutions would now be required to manifest – to symbolise – who as well as what they were for. According to Chamberlain, architect of the Birmingham School of Art, ‘architecture testifies to the moral worth of the culture that produced it.’^{liii}

It is out of this complex milieu that the right conditions emerged for the establishment and construction of new art school buildings quite unparalleled in their responsiveness to the economic, social and environmental questions that characterised the complex changes sweeping over the late Victorian industrial city. Richard Tangye justified his donation for the construction of the Art Gallery and School in Birmingham by claiming that since completion, ‘in no town in England has there been such an advance in everything that tends to raise the intellectual level and to elevate the taste of every class, and the inhabitants of Birmingham, whether they are native born or “adopted sons”, feel that they are indeed “citizens of no mean city”’.^{liv} Writing in 1887, the art critic Alfred St. Johnston went further:

It may surprise some of our readers when we calmly state, strange as it may seem, that, far from being the centre and hotbed of all that is inartistic and ugly, the Birmingham of today is perhaps the most artistic town in England.^{lv}

[Fig. 19]

Francis Newbury would make a similar claim for Glasgow:

At this end of the nineteenth century, in the midst of one of the busiest, noisiest, smokiest cities, that with its like fellows make up the sum-total of the greatness of Britain's commercial position, there is a movement existing, and a compelling force behind it... which... may yet, perhaps, put Glasgow on the Clyde into the hands of the future historian of Art, on much the same grounds as those on which Bruges, Venice and Amsterdam find themselves in the book of the life of the world.^{lvi}

Writing a quarter of a century later, William Lethaby described the schools as 'real making shops' which held the potential alongside museums of arts and crafts to form 'local centres of civilisation.'^{lvii} And promoting the merits of the English arts and crafts movement to a German audience in 'The English House', Hermann Muthesius praised the influence of the schools (on architects but also 'artistic craftsmen of all kinds'), claiming that they had represented a 'modern tradition' in Britain for two decades:

England, the country without art, the country that until recently had so to speak, lived on the art of the continent was pointing the way to the world and the world was following...

It had ceased to be an article of faith that historical art forms were the ones to imitate, instruction no longer began with copying old forms but with a sedulous study of nature, and design no longer derived from the forms of earlier art but from those of nature. For many years now, hundreds of draughtsmen, modellers, architects, teachers of drawing and artistic craftsmen of all kinds have been pouring from these schools and working and creating in the new tradition, which has thus maintained an entirely unified image in England and is no longer questioned in any quarter.^{lviii}

What is remarkable, given the diverse origins of these buildings, is the formal similarities they often display, and what they can reveal to us about architects' evolving understanding of how to respond to the climate of the industrial city in the nineteenth century. The continued decline in the state of the environment led to quite pragmatic but nonetheless architecturally radical solutions for the provision of enough light and air for a building type that was *defined* by the need for spaces suitable for the production and evaluation of art. While it would take another half century to transform the physical atmosphere of the city, the art school represented an architectural metaphor of what it meant to transform a dark and uncivilised factory town into a bright city of culture.

ⁱ Edwin Chadwick, 'Report from the Select Committee on Arts and Manufactures 1836', *The London and Westminster Review*, 1837, 116–139.

ⁱⁱ Chadwick; for a general history of the Schools of Design see Quentin Bell, *The Schools of Design* (London: Routledge and Kegan Paul, 1963).

ⁱⁱⁱ Clive Ashwin, *Art Education: Documents and Policies 1768-1975* (London: Society for Research into Higher Education, 1975), pp. 26–28.

^{iv} Minutes of Evidence, q. 690, in Ashwin, p. 32.

^v Minutes of Evidence, qq. 1886, 1887, in Ashwin, p. 33.

^{vi} Francis Fuller, *Shall We Spend 100,000 on a Winter Garden for London, or in Endowing Schools of Design in Birmingham, Manchester, Sheffield, Belfast, Glasgow, Leeds, Etc., Etc.?* (London: John Ollivier, 1851), pp. 8–9.

^{vii} Fuller, p. 12.

^{viii} Anonymous Manufacturer, 'The Female School Of Design In The Capital Of The World', *Household Words*, 2 (1851), pp. 578–579.

^{ix} Anonymous Manufacturer, p. 581.

^x 'Second Report of the Royal Commissioners of the Exhibition of 1851', 1852, p. 11.

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- ^{xi} John Frederick Physick, *The Victoria and Albert Museum: The History of Its Building* (Oxford: Phaidon Christie's, 1982), p. 16.
- ^{xii} Physick, pp. 97–99.
- ^{xiii} 'Metropolitan Improvements', *The Standard*, 5 February 1869.
- ^{xiv} Department of Science and Art, 'Directory, with Regulations for Establishing and Conducting Schools of Art', 1888, p. 114. While these guidelines were included in all editions of the Directory, later editions were more explicit about the relationship between top and side light.
- ^{xv} The Act caused confusion as it was interpreted to suggest that Councils could choose either to build Libraries and Museums, or Schools for Science and Art. The matter was not fully resolved until the Act was revised in 1884, when it was stated that since 'doubts are entertained as to the meaning of those provisions... it is hereby declared and enacted that – buildings may under the said sections be erected for public libraries, public museums, schools for science, art galleries, and schools for art, or for any one or more of those objects.' See Public Libraries Act, 1855, Section 8, Stuart Macdonald, *The History and Philosophy of Art Education* (London: University of London Press, 1970), p. 182.
- ^{xvi} Macdonald, p. 182.
- ^{xvii} William Nicholson, *Smoke Abatement: a Manual for the Use of Manufacturers, Inspectors, Medical Officers of Health, Engineers, and Others* (London: Griffin, 1905).
- ^{xviii} H. H. Kimball, 'The Meteorological Aspect of the Smoke Problem', *Monthly Weather Review*, 42 (1914), pp. 29–34.
- ^{xix} Manchester School of Art, '1874 Annual Report', 1874, pp. 6–7.
- ^{xx} Manchester School of Art, '1876 Annual Report', 1877, p. 17.
- ^{xxi} J. G. Snead Cox, *The Life of Cardinal Vaughan* (London: Herbert and Daniel, 1910), pp. 305–306.
- ^{xxii} Manchester School of Art, '1877 Annual Report', 1877, p. 12.
- ^{xxiii} A 1905 report suggested up to a 45% loss of light in towns most affected by smoke. See Nicholson.
- ^{xxiv} Manchester School of Art, '1875 Annual Report', 1876, p. 23.
- ^{xxv} Manchester School of Art, '1876 Annual Report', p. 8.
- ^{xxvi} Cecil Stewart, *Art in Adversity: A Short History of the Regional College of Art, Manchester* (Manchester: Royal Manchester Institution, 1954), p. 15.
- ^{xxvii} Manchester School of Art, '1876 Annual Report', p. 8.
- ^{xxviii} Manchester School of Art, '1877 Annual Report', p. 22.
- ^{xxix} Henry Cole, 'The Meaning of Art Culture', in *1876 Annual Report* (Manchester School of Art, 1877), p. 46.
- ^{xxx} David Jeremiah, *A Hundred Years and More* (Manchester: Manchester Polytechnic, 1980), p. 22.
- ^{xxxi} Jeremiah, p. 22.
- ^{xxxii} John Swift (1988), 'Birmingham and Its Art School 1800-1921', *Journal of Art and Design Education*, 7 (1988), pp. 12–13.
- ^{xxxiii} Birmingham Society of Arts and School of Design Management Committee, 'Minutes', pp. 22–23.
- ^{xxxiv} Macdonald, p. 185.
- ^{xxxv} Quoted in Stuart Davies, *By the Gains of Industry: Birmingham Museums and Art Gallery 1885-1985* (Birmingham: Birmingham Museums and Art Gallery, 1985), p. 20.
- ^{xxxvi} Bryan Little, *Birmingham Buildings: The Architectural Story of a Midland City* (Newton Abbot: David and Charles), p. 33.

^{xxxvii} Birmingham Museum and School of Art Committee, *Minutes*, I, pp. 10–15. Which of the new elements that appear in the drawings between February and March 1884 were present in Chamberlain's original designs, and which were introduced and assimilated into the design by William Martin after Chamberlain's death, can only be speculated. However, given the clear evolution of the form of the design and the improvement in its resolution it would seem that until now Martin has not received as much credit as he justly deserves for the design of the building.

^{xxxviii} The Glasgow School of Art, 'Report of Deputation Appointed to Visit Manchester, Birmingham and London', 1893, p. 3.

^{xxxix} Glasgow School of Art Building Committee, 'Minutes', pp. 2–20.

^{xl} It is also interesting to note the remarkable similarity between the corridor linking the stairs at roof level at Birmingham, and the justification for it – to connect the two halves of the building on the upper floor – and Mackintosh's Hen Run at Glasgow, which fulfils the same purpose. The Hen Run was an addition Mackintosh had not anticipated making, necessitated by the addition of rooftop studios to the east wing of the school alongside construction of the west wing. The headmaster's studio occupied the full structural width of the building at the point where the link would otherwise rationally have been made.

^{xli} Andrew MacMillan, 'A Modern Enigma: A Paradox of Reduction and Enrichment', in *Mackintosh's Masterwork: The Glasgow School of Art* (Glasgow: Chambers, 1989), p. 56.

^{xlii} Mark Girouard, 'Glasgow School of Art', in *Charles Rennie Mackintosh* (Glasgow Museums, 1996), p. 157.

^{xliii} Dean Hawkes, *The Environmental Imagination: Technics and Poetics of the Architectural Environment* (London: Routledge, 2008), pp. 19–21.

^{xliv} MacMillan, p. 51; this phrase is borrowed from the Arts and Crafts architect J.D. Sedding; see Harry Francis Mallgrave, *Modern Architectural Theory: A Historical Survey, 1673–1968*, 1st edn (Cambridge University Press, 2009), p. 176.

^{xliv} See Colin Cunningham, *Victorian and Edwardian Town Halls* (London: Routledge and Kegan Paul, 1981), p. xiii.

^{xlvi} See Henrik Schoenefeldt, 'Transformation of the Horticultural Glasshouse Prototype for Human Habitation' (University of Cambridge, 2011). The logical conclusion of this argument is that twentieth century hi-tech is in fact the realisation of an idea a century and a half old – truly neo-Victorian glass architecture.

^{xlvi} Andrew Saint, 'Victorian Schools: Beacons of the Future?', *The Victorian*, 2007, p. 8.

^{xlviii} See for example Edward Robert Robson, *School Architecture: Being Practical Remarks on the Planning, Designing, Building, and Furnishing of School-houses* (John Murray, 1874), p. 167.

^{xliv} The glazing ration is the area of glazing expressed as a percentage of the area of the total façade.

ⁱ Francis Newbery, Introduction to David Martin, *The Glasgow School of Painting* (London: George Bell and Son, 1897), p. xiv. Francis Newbery, in *The Glasgow School of Painting* (London: George Bell and Son, 1897), p. xiv.

^{li} Arindam Dutta, *The Bureaucracy of Beauty: Design in the Age of Its Global Reproducibility* (Routledge, 2007), p. 20.

^{lii} Thomas Greenwood, *Museums and Art Galleries* (London: Simpkin, Marshall, and Company, 1888), p. 389; in Kate Hill, 'Thoroughly Embued with the Spirit of Ancient Greece: Symbolism and Space in Victorian Civic Culture', in *Gender, Civic Culture and Consumerism: Middle-Class Identity in Britain, 1800–1940* (Manchester: Manchester University Press, 1999), pp. 102–103.

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- ^{liii} Michael W. Brooks, *John Ruskin and Victorian Architecture* (London: Thames and Hudson, 1989), p. 242; see also R. J. Morris and Richard Rodger, *The Victorian City: A Reader in British Urban History 1820-1914* (London: Longman, 1993), p. 21.
- ^{liv} Richard Tangye, *One and All: An Autobiography* (London: S.W. Partridge, 1889), p. 135.
- ^{lv} Alfred St. Johnston, 'The Progress of Art in Birmingham', *The Magazine of Art*, 1887.
- ^{lvi} Francis Newbery, in *The Glasgow School of Painting* (London: George Bell and Son, 1897); R. Billcliffe, *The Glasgow Boys* (London: John Murray, 1988), p. 11.
- ^{lvii} W. R. Lethaby, *Form in Civilization; Collected Papers on Art and Labour* (London: Oxford University Press, H. Milford, 1922), pp. 29–30, 181–182.
- ^{lviii} Hermann Muthesius, *The English House* (London: Crosby Lockwood Staples, 1979), p. 14.

Captions

[Fig. 1]. The West Staircase, South Kensington. A recurring motif of the letters 'S' and 'A' can be seen in the decorative detail.

[Fig. 2]. The studios at South Kensington.

[Fig. 3]. Redmayne's design as published in 'The Building News' in 1878.

[Fig. 4]. The north façade of Manchester School of Art to Grosvenor Square.

[Fig. 5]. Detail of the Antique Studio, Manchester School of Art.

[Fig. 6]. Birmingham School of Art today, also showing the extension along Cornwall Street of 1893.

[Fig. 7]. Section dated 13th February 1884.

[Fig. 8]. Section dated 14th March 1884.

[Fig. 9]. The glass roof lantern at the top of the stairs.

[Fig. 10]. Detail of the Antique Studio, Birmingham School of Art.

[Fig. 11]. Birmingham School of Art Entrance, showing light filtering down from the first floor to the basement.

[Fig. 12]. The Art Laboratory, Birmingham School of Art.

[Fig. 13]. The Composition Room, Glasgow School of Art.

[Fig. 14]. The north façade of Glasgow School of Art to Renfrew Street, showing the main studio windows.

[Fig. 15]. A corridor space lit from the south, Glasgow School of Art.

[Fig. 16]. The Museum, Birmingham School of Art.

[Fig. 17]. The Museum, Glasgow School of Art.

[Fig. 18]. The north façade of Scotland Street School.

[Fig. 19]. Bird's Eye View of Birmingham published in 'The Graphic' in 1886 showing the new civic centre, from right to left; the Town Hall, The Council House, the Art Gallery and the newly completed Art School.